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AUTHOR Easterday, Joseph R.
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ABSTRACT

This paper is a product of Project COMPETE, a service demonstration project undertaken for the purpose of developing and validating a model and training sequence to improve transition services for moderately, severely, and profoundly retarded youth. The paper reports on a study which examined the communication skills, critical academic skills, and machine/tool use requirements identified by employers for 104 selected entry-level jobs in a small midwestern city. The jobs analyzed through employer interviews were representative of occupational clusters identified on the basis of a labor market trend analysis, their potential for initial access and employment stability for moderately mentally retarded workers, and structured interviews with employers. Job clusters were: food service, custodians/janitors, housekeeping, laundry, groundskeeping, and general labor. Results suggested that negative assumptions of many job placement personnel may not be warranted since employers reported that most of the positions surveyed required no more than minimal communication skills or academic skills (e.g. label recognition and simple counting). No single machine or tool was reported as frequently used across the clusters. (DB)

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Working Paper #87-3

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Project COMPETE (Community-based Model for Public school Exit and Transition to Employment) is a service demonstration project funded to investigate secondary education and transition services for severely handicapped youth. COMPETE is a cooperative effort between the Center for Innovation in Teaching the Handicapped at Indiana University, and agencies in Columbus and Seymour, Indiana: Developmental Services, Inc., and the Bartholomew County Special Services Cooperative.

The purpose of COMPETE is to develop and validate a model that applies the results of previous research and exemplary practices. Project COMPETE is developing a training sequence to assist moderately, severely, and profoundly retarded youth in making the transition from school to employment in the competitive environment possible. COMPETE is also concentrating on establishing formal linkages between the rehabilitation center and the public school system in order to ensure a totally integrated continuum of preparation for youth from secondary through post-secondary levels.

The attached working paper is one product of this project. For more information on Project COMPETE please contact either of the project staff below.

PROJECT COMPETE STAFF

Principal Investigator	Richard B. Dever. Ph.D.
Research Associate	Joseph R. Easterday

Center for Innovation in Teaching the Handicapped
Smith Research Center, Rm. 150
Indiana University
Bloomington, IN 47405
(812) 335-5849

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Abstract

This study examined the communication, critical academic skill, and machine/tool use requirements reported by employers for 104 selected entry-level jobs in a midwestern city of approximately 30,000 residents. The jobs subjected to analysis were representative of 6 occupational clusters identified on the basis of a labor market trend analysis, their potential for initial access and employment stability for moderately mentally retarded workers, and structured interviews with employers. Analysis of the data indicates that a large percentage of entry level jobs may require minimal communication skills, and no critical academic skills or basic applications of academic skills. Within each occupational cluster, frequently used machines and tools were identified. Across all 6 occupational clusters, however, no single machine or tool accounted for at least 20% of the total. The general process by which the study was conducted and a discussion of the programming implications are presented.

An Analysis of Occupational Requirements

Relative to the Employment of Severely Handicapped Individuals

Supported work personnel must make the distinction between selling a product and marketing a product. Selling may be accomplished without consumer input. Marketing involves providing a product which is tailored to the needs and interests of the consumer. From the perspective of severely retarded persons, Gold (1980) pointed out that they are best served if they are trained to do marketable tasks that employers need. From the perspective of employers, supported work clients may be marketed as a potentially valuable product to their businesses. From an instructional perspective, a teacher must know what to teach before the learner can be effectively taught. Therefore, it is incumbent upon public schools and supported employment programs to involve local consumers in the development of their programs' most important products--competent, marketable employees.

Each place of employment has its own methods of work and its own expectations for performance. Before severely handicapped workers are placed in these employment environments, it is essential that training and placement personnel be able to evaluate and analyze job requirements and expectations effectively (Wehman, 1980). In addition, Rusch (1979) argues that a serious area of concern to vocational habilitation personnel should be the validation of training efforts within a framework of employers' expectations. Central to this concern has been the concept of social validation, which consists of agreement by potential employers as to the relevance of training goals and procedures

(Schutz, Jostes, Rusch, & Lamson, 1980).

Wehman (1981) presents four major factors that influence long term employability of severely handicapped individuals: (a) the client's vocational capabilities; (b) the client's independent living capabilities; (c) parental attitudes and behavior; and (d) the client's work environment. Wehman maintains that while the assessment of requirements of the work environment may be the most important aspect of employment evaluation, it is the one that is often least likely to be thoroughly conducted. The initial step in implementing a job placement program is a careful assessment of community job opportunities (Wehman, 1981). Once potential occupational clusters are identified, the next step involves direct contact with employers. Informal interviewing of employers should identify general behavioral and specific job skills necessary for employment. This employer information can then be used to develop a profile of general requirements for both initial occupational access and long-term employment success.

Rusch, Schutz, and Agran (1982) did a mail survey of 120 potential employers in food service and janitorial/maid occupations from six communities in Illinois. A total of 66% of the employers responded to the survey. Analysis of responses yielded 70 social and vocational survival skills which at least 80% of the respondents agreed were necessary for entry into employment. Five skills were unanimously agreed upon: (a) verbally reciting full name upon request; (b) demonstrating basic addition skills; (c) keeping one's hair combed; (d) following one instruction at a time; and (e) completing repetitive tasks previously

learned to proficiency.

Frongillo (1985) demonstrated a method for identifying and validating work competencies of entry-level positions for mildly mentally handicapped persons. Information from the Chamber of Commerce and the Job Service Center of a mid-sized midwestern city indicated that four occupational job clusters were prominent. The two occupational clusters of manufacturing and communications/media were selected for this study, and three job analyses were conducted to identify work duties and responsibilities of entry-level jobs in both occupational clusters. Sixteen of the 87 observed duties across all six analyses appeared at least two times. These sixteen duties were then submitted for validation to 12 employers or personnel managers selected at random from an original pool of businesses provided by the Chamber of Commerce. The following entry-level job competencies were validated as essential in the two occupational clusters: (a) takes instructions from/helps other employees to perform work duties; (b) takes instructions from supervisors to perform work duties; and (c) handles materials weighing five to 50 pounds. These entry-level job skills were also found to be common across small, medium, and large businesses.

The present study was conducted in a midwestern community of approximately 31,000 residents as part of a federally funded model demonstration project: Project COMPETE (Community-based Model for Public School Exit and Transition to Employment). This project was designed to develop and validate a model transition program that applies the results of previous research and exemplary practices. The original impetus for

writing this paper was a request by a job coach at the local rehabilitation center in the community where the employment survey was conducted. The job coach had been told by other competitive employment placement and training personnel that clients who had poor communication and academic skills were unlikely candidates for competitive employment. The job coach was also curious as to whether pre-work placement experiences involving certain machines or tools might be beneficial in subsequent employment training placements. Thus, the intent of the present study was to identify occupational requirements relative to selected entry-level positions that might be available to moderately mentally retarded persons. This paper presents the findings from an analysis of communication, critical academic skill, and machine/tool use requirements within and across occupational clusters accessible to moderately retarded workers in a target community.

Method

The Project COMPETE employment survey sequence included the following activities: (a) a general economic and labor market trend analysis of the selected community; (b) the identification of occupational clusters which represent both initial access and employment stability for severely handicapped workers; (c) the generation of a list of potential employers; (d) an initial telephone contact with potential employers; (e) a structured interview of potential employers; and (f) an analysis of specific entry-level/minimum wage positions identified in the employer interview. (For a more detailed description of the survey process, see Sitlington and Easterday, 1985 and Easterday and

Sitlington, 1985.)

Identification of Occupational Clusters and Employers

The first phase in the employment survey involved a labor market analysis. The purpose of this analysis was to identify occupational clusters within a given community that are accessible to the population of target workers and which represent an initial and continued opportunity for employment. The labor market trend analysis identified job clusters that are not only currently accessible, but also likely to represent stable or expanding opportunities in the foreseeable future for a specific community. (For a more detailed description of the labor market trend analysis process, see Sitlington & Easterday, 1985.)

Three sources of information were included in the labor market trend analysis for this study: (a) statistical surveys from the Indiana Employment Security Division; (b) a community audit published by the local Chamber of Commerce; and (c) a labor market projection study conducted by the local vocational education program. Synthesis of these data yielded the following occupational clusters: (a) food service workers; (b) custodians/janitors, (c) housekeepers; (d) laundry workers; (e) groundskeepers; and (f) general laborers, (e.g., kennel attendant, truck loader, and inventory stocker). All of these clusters: (1) represented stable or expanding employment opportunities within the targeted community; (2) typically required little or no previous work experience; (3) had no specific educational qualifications; and (4) required no advanced skill training. Given the six occupational clusters, two individuals who were familiar with the community used the

local phone book to generate a list of 119 potential employers. Each place of employment was contacted by phone to schedule a personal interview at the employer's convenience. A total of 93, or 78% of the employers, agreed to a personal interview.

Personal Interviews With Potential Employers

The primary objectives of the employer interview were to: (a) obtain general descriptive information about the business; (b) determine preferred and non-preferred worker traits; (c) gauge employer attitudes and expectations toward hiring mentally retarded workers; and (d) identify specific job opportunities. The interviews were structured using a three-page data recording form. Most interviews required approximately 15-20 minutes to complete. (For a more detailed description of the employer interview process, see Easterday & Sitlington, 1985.)

Analysis of Specific Entry-Level Positions

If potential entry-level jobs were identified during the interview, the interviewer arranged a time to conduct a detailed analysis of the specific conditions and requirements of each job. The general purpose of this job-specific analysis was to screen for jobs which were suitable for moderately retarded workers and to catalog employment conditions and requirements of individual jobs. (For a more detailed description of the job-specific analysis, see Easterday & Sitlington, 1985). The data reported in the present study were taken from the responses of 70 employers who were determined to have at least one entry-level job that could be performed by a moderately retarded

individual (i.e., required little or no previous experience, no advanced skill training, or specific educational qualifications).

As part of the assessment involving communication skills, each employer was asked what level of communication skills they felt was required for specific entry-level jobs in their company, and to respond by choosing one of the following: (a) none/minimal; (b) simple polite responding; (c) sentences/impaired speech accepted; and (d) sentences/clear speech required. Critical academic skills were determined by asking the employers the open-ended question, "What kinds of academic skills are required to do [a specific entry-level job in their company]?" Machine/tool use requirements were determined by asking employers the open-ended question, "What kinds of machines and tools does a [title of a worker, e.g., dishwasher] at [name of company] use?"

Interviewers and Interview Consistency

All employers were assigned to one of three interviewers from the master list, and each interviewer arranged his/her own interviews with potential employers. Two of the interviewers were staff members of a local rehabilitation agency, and one was a public school teacher for moderately retarded students. None of the interviewers participated in the survey for the entire duration of the study. Before beginning the data collection process, the interviewers were trained by the author. Each of the survey items was reviewed to ensure consistency across interviews and interviewers. Approximately once per month, the item-by-item review process was repeated with all currently active interviewers.

Results

A total of 104 entry-level jobs were identified and evaluated in sufficient detail to yield data on communication, critical academic skill, and machine/tool use requirements. The interview data were analyzed to provide a composite profile (see Table 1), and profiles for each occupational cluster (see Tables 2-7). Some of the individual machine/tool requirements were grouped into generic classifications (e.g., kitchen utensils and small appliances, power hand tools) to condense some of the data into meaningful categories.

Composite Profile

Across all six occupational clusters, the 70 employers responded that only minimal communication skills were required for 48% of the 104 entry-level jobs analyzed in this study. Simple polite responding accounted for an additional 11% (see Table 1). Only 14% of the jobs were described by the employers as requiring full sentences and clear speech, and 27% of the jobs required speaking in sentences but accepted impaired speech.

Although most (62%) of the jobs were described by employers as requiring academic skills, 9% of the required academic skills involved counting, 5% involved the recognition and/or matching of numbers, and 3% involved recognizing key words. Employers reported that 40 (38%) of the jobs included in this study required no academic skills.

Employers reported that ability to use certain tools or machines was required for 88% of the jobs. However, no single machine, tool, or

group of tools reported by employers was able to account fo . least 20% of the machines/tools reported.

Insert Table 1 about here

Food Service Cluster

The majority of the food service jobs identified in this study were described by the employers as requiring none/minimal (65%) or simple polite responding (9%). The employers said that slightly more than half (52%) of the jobs required no academic skills. Nineteen or 83% of the jobs were reported to require the use of machines or tools. Kitchen utensils and small appliances were cited in 74% of the jobs, and using a dishwasher was part of 43% of the jobs. (See Table 2.)

Insert Table 2 about here

Custodians/Janitors Cluster

None of the employers interviewed regarding custodial/janitorial jobs reported that speaking in sentences and clear speech were requirements for employment. Seventeen (68%) of the jobs were rated by employers as requiring no more than minimal communication skills. About

half (48%) of the custodial/janitorial jobs required some academic skills. Volume measuring was a reported requirement in all of the jobs from this cluster in which employers stated critical academic skills. All but one employer in this cluster said that machine or tool use was required. Floor strippers/buffers (56%) and small hand-held cleaning tools (52%) accounted for the most commonly reported tools in these jobs. (See Table 3.)

Insert Table 3 about here

Housekeeping Cluster

None of the employers interviewed regarding housekeeping jobs indicated that sentences and clear speech were employment requirements. Four of the employers (57%) indicated that only minimal communication skills were necessary. All but one of the jobs were reported to require some academic skills. Sweepers/vaccuums represented the most commonly identified machine or tool used in the housekeeping jobs. (See Table 4.)

Insert Table 4 about here

Laundry Cluster

Half of the employers interviewed regarding laundry jobs indicated that only minimal communication skills were necessary. Only one job was said to require communication in full sentences with clear speech. Most of the jobs (86%) were said to require some academic skills, and all of the laundry jobs required machine/tool usage. Running a washer and dryer was required by half or more of the laundry jobs. (See Table 5.)

Insert Table 5 about here

Groundskeeping Cluster

Only four groundskeeping positions were identified in this study. These jobs (see Table 6) tended to require minimal communication skills, academic skills, and the use of machines/tools (particularly power hand tools and lawn mowers).

Insert Table 6 about here

General Labor Cluster

General labor was the only cluster included in the present study in which more than half of jobs were rated by employers as requiring

communication in sentences. One possible explanation of the greater emphasis on communication skills for general labor jobs may be that they typically required more customer contact and interaction than the other job clusters. In another part of the survey not reported in this study, employers from the general labor cluster frequently cited good customer relations as a desired worker trait. Critical academic skills were reported in 65% of the general labor jobs, and machine or tool use was cited in 74% of the jobs. (See Table 7.)

Insert Table 7 about here

Discussion

Employer attitudes and values represent critical correlates of initial occupational access and employment stability of severely handicapped persons (Easterday, 1985). This study demonstrates techniques and procedures to survey employment settings, utilizing the input of potential employers.

The results of this study indicate that assumptions of some job placement personnel about predictors of successful job placement may not be warranted. A priori assumptions about employers' job requirements may needlessly prevent many severely handicapped individuals from attaining competitive employment status.

Employers' responses regarding communication requirements for

specific entry-level positions in the surveyed community indicate that a large percentage of jobs from the food service, custodial/janitorial, housekeeping, laundry, and groundskeeping occupational clusters require no more than minimal communication skills. Only in the general labor category are employer requirements for communication skills high.

Critical academic skill expectations of employers are likewise not as high as some employment placement personnel have maintained. An additional consideration for interpretation of the critical academic skills is the comprehensiveness of the employer responses. Some employers qualified their academic requirements by saying that the reading requirement really amounted to recognizing labels on cleaning materials, or that math requirements actually involved simple counting. It is possible that had employers who stated that a job required certain academic skills been asked to specify the application of these skills, more of the identified academic skills would have been basic applications.

Within each occupational cluster, frequently used machines and tools were identified, such as kitchen utensils and small appliances for food service workers, and floor strippers/buffers for custodians. Work experiences which provide practical training in the use of frequently required machines and tools within some occupational clusters for high school-age students may be beneficial. Across the occupational clusters selected for this study, however, no single reported machine or tool accounted for at least 20% of the total responses.

At least two cautions should be considered when interpreting the

findings of this study. First, generalizeability of results based on the employment settings and requirements of specific communities to other communities has not been established. In fact when Alper (1985) compared the rankings of entry-level survival skills rated by employers of food service and janitorial workers from two different communities, she found considerable disagreement in the ranking of individual skills. Replications of studies which involve different communities, occupational clusters, and data classification systems might easily obtain different but equally valid results given the different parameters of the studies. Supported employment personnel must, therefore, be capable of assessing employer attitudes, values, and perceptions in their respective communities.

The second caution involves the fact that most of the data reported in this study was based solely on employer responses to the interview questions. Further research is necessary to validate employer-cited job requirements against the observed required skills of actual job incumbents. Employers may have frequently neglected or forgotten to specify some critical academic skills or necessary machines and tools for their jobs. On the other hand, just as some employers probably failed to qualify critical academic skills as basic skill applications, some employers may have reported reading, writing, and math requirements that were not actually critical requirements for a particular job, but only part of a hiring policy. It is also possible that if a worker could perform most of a job's tasks at acceptable performance rates and quality specifications, job responsibilities could

be modified in a way that eliminates some academic requirements and is still acceptable to the employer.

Additional research into the requirements of labor market settings, including the attitudes, perceptions, and values of employers is clearly in order. It is important to train severely handicapped persons to do a specific job. But if that job does not represent both initial occupational access and long-term stability, the training effort may have be wasted. To assist severely handicapped people in becoming competent and valued employees, public school and rehabilitation programs should consider the adoption of a marketing strategy. One possibility for such a strategy might include the following components: (a) determination of occupational clusters that represent realistic access and long-term job stability within a target community; (b) surveying employers to determine factors which influence the initial decision to hire employees, whether handicapped or nonhandicapped; (c) identification of specific skills and competencies of work settings, and employer-valued worker traits; (d) development of an on-going system for obtaining employers' evaluative feedback regarding the work performance of severely handicapped employees; and (e) adjustment of marketing tactics and student/client training programs as information from the four components is obtained.

A business approach to fields traditionally thought of as "helping" professions (e.g., special education, vocational rehabilitation) may seem somehow impersonal and dehumanizing. Remember, however, that the product being developed and marketed is competent,

capable, and valued employees-- persons who would be better able to take charge of their own lives, and access more of the benefits and opportunities available in adult community participation.

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Author Notes

The unpublished manuscripts cited in this paper (Easterday, 1985; Easterday & Sitlington, 1985; Sitlington & Easterday, 1985) are available on a cost-recovery basis from the Center for Innovation in Teaching the Handicapped, Indiana University, Bloomington, IN, 47405.

Table 1

Composite of Employer Responses to Occupational Requirements (104 Jobs)

Communication Requirements

1. None/minimal:

   50(48%)

2. Simple polite responding:

   11(11%)

3. Sentences/impaired speech accpt.:

   28(27%)

4. Sentences/clear speech req.:

   15(14%)

Critical Academic Skills

A. None: 40(38%)

B. Yes: 64(62%)

   Read: 43(41%)

   Write: 22(21%)

   Measure: 13(13%)

   Count: 9(9%)

   Math: 8(8%)

   Recognize/match numbers: 5(5%)

   Recognize key words: 3(3%)

   Follow written schedule: 1(1%)

   Make change: 1(1%)

   Keep scores: 1(1%)

Machines/Tools Required

A. None: 13(12%)

B. Yes: 91(88%)

Tools Required In At least 20% Of All The Jobs Surveyed

None

Table 2

Employer Responses to Occupational Requirements for 23 Food Service Jobs

Communication

1. None/minimal: 15(65%)
2. Simple polite responding: 2(9%)
3. Sentences/impaired speech accpt.: 2(9%)
4. Sentences/clear speech req.: 4(17%)

Machines/Tools Required

A. None:4(17%)

B. Yes: 19(83%)

Tools Required In At Least 20% Of The Food Service Jobs

Kitchen utensils and small appliances: 17(74%)

Dishwasher: 10(43%)

Critical Academic Skills

A. None: 12(52%)

B. Yes: 11(48%)

Read: 8(35%)

Recognize key words: 2(9%)

Measure (vol., wt.): 1(4%)

Write: 1(4%)

Follow written schedule: 1(4%)

Math: 1(4%)

Table 3

Employer Responses to Occupational Requirements for 25 Custodial/Janitorial Jobs

Communication Requirements	Critical Academic Skills
1. None/minimal: 17(68%)	A. None: 13(52%)
2. Simple polite responding: 1(4%)	B. Yes: 12(48%)
3. Sentnces/impaired speech accpt.: 7(28%)	Measure (vol.): 13(52%)
4. Sentences/clear speech req.: 0(0%)	Read: 7(28%)
	Count: 1(4%)
	Recognize key words: 1(4%)

Machines/Tools Required

A. None: 1(4%)

B. Yes: 24(96%)

Tools Required In At Least 20% Of The Custodial/Janitorial Jobs

Floor stripper/buffer: 14(56%)	Broom: 11(44%)
Small hand-held cleaning tools: 13(52%)	Carpet cleaner: 6(24%)
Vaccuum: 12(48%)	Carpet shampooer: 5(20%)
Mop: 11-44%	

Table 4

Employer Responses to Occupational Requirements for 7 Housekeeping Jobs

Communication Requirements	Critical Academic Skills
1. None/minimal:	A. None: 1(14%)
4(57%)	B. Yes: 6(86%)
2. Simple polite responding:	Read: 4(57%)
0(0%)	Write: 4(57%)
3. Sentences/impaired speech accpt.:	Measure: 2(29%)
3(43%)	Recognize/match numbers: 2(29%)
4. Sentences/clear speech req.:	
0(0%)	

Machines/Tools Required

A. None: 0(0%)

B. Yes: 7(100%)

Tools Required In At Least 20% Of The Housekeeping Jobs

Sweeper/vacuum: 6-86%	Brushes: 2(29%)
Mop & bucket: 3-43%	Sponges: 2(29%)
Broom: 2-29%	

Table 5

Employer Responses to Occupational Requirements for 14 Laundry Worker Jobs

Communication Requirements	Critical Academic Skills
1. None/minimal:	A. None: 2(14%)
7(50%)	B. Yes: 12(86%)
2. Simple polite responding:	Write: 9(64%)
1(7%)	Count: 7(50%)
3. Sentences/impaired speech accpt.:	Read: 7(50%%)
5(36%)	Math: 3(21%)
4. Sentences/clear speech req.:	Make change: 1(7%)
1(7%)	

Machines/Tools Required

A. None: 0(0%)

B. Yes: 14(100%)

Tools Required In At Least 20% Of The Laundry Jobs

Washer: 8(57%)	Mechanical folder: 4(29%)
Dryer: 7(50%)	Ironing machine: 3(21%)
Carts: 4(29%)	

Table 6

Employer Responses to Occupational Requirements for 4 Groundskeeping Jobs

Communication Requirements	Critical Academic Skills
1. None/minimal: 3(75%)	A. None: 1(25%)
2. Simple polite responding: 0(0%)	B. Yes: 3(75% Read: 3(75%) Write: 3(75%) Measure (vol.): 1(25%)
3. Sentences/impaired speech accpt.: 1(25%)	
4. Sentences/clear speech req.: 0(0%)	

Machines/Tools Required

A. None: 0(0%)

B. Yes: 4(100%)

Tools Required In At Least 20% Of The Groundskeeping Jobs

Power hand tools (e.g. edger, weed eater): 4(100%)	Roto-tiller: 1(25%)
Lawn mower: 3(75%)	Snow blower: 1(25%)
Tractor: 2(50%)	

Table 7

Employer Responses to Occupational Requirements for 31 General Labor Jobs

Communication Requirements	Critical Academic Skills
1. None/minimal:	A. None: 11(35%)
4(13%)	B. Yes: 20(65%)
2. Simple polite responding:	Read: 14(45%)
7(23%)	Write: 5(16%)
3. Sentences/impaired speech accpt.:	Math: 4(13%)
10(32%)	Recognize/match numbers: 3(1%)
4. Sentences/clear speech req.:	Count: 1(<1%)
10(32%)	Use scale: 1(<1%)
	Keep scores: 1(<1%)

Machines/Tools Required

A. None: 8(26%)

B. Yes: 23(74%)

Tools Required In At least 20% Of The General Labor Jobs

Carts: 6(20%)